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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,375	04/26/2007	Robert James Donohue	078305.117518	2257
530 7590 08/21/2009 LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD, NJ 07090				
EXAMINER				
DODDS, SCOTT				
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1791				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/574,375

Applicant(s)

DONOHUE, ROBERT JAMES

Examiner

Scott W. Dodds

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-12, 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 13-14 and 17-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments, filed June 9, 2009, with respect to the rejection(s) of claim(s) 5-14 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of over Heimberger (US Pat. No. 3,431,337) in view of Heimberger (US Pat No. 3,770,361 (hereinafter "Heimberger2"), Blecher et al. (US Pat. No. 4,750,253) and Dijkman, Sr. et al. (US Pat. No. 5,167,891).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 5, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimberger (US Pat. No. 3,431,337) in view of Heimberger (US Pat No. 3,770,361 (hereinafter "Heimberger2"), Blecher et al. (US Pat. No. 4,750,253) and Dijkman, Sr. et al. (US Pat. No. 5,167,891).

Heimberger discloses a coiling system for continuously forming coiled plastic, said coiling system comprising a main tube shaft for forming plastic tubing into a helix, said main tube shaft having a longitudinal axis (See Fig. 5, wherein plastic [13] is helically coiled around a mandrel [10] with a longitudinal axis). Note that the mandrel in Heimberger may be circular (See col. 1, line 71 to col. 2, line 2), but is considered to be a main tube shaft regardless of its shape. Heimberger further teaches a drive means (Fig. 5, [17], and note a drive means is conventionally a motor and it would have been implicit and/or obvious at the time of invention to use a motor as the drive means) attached to one end of the main tube shaft, said driving means being for rotating said main tube shaft about said longitudinal axis (See col. 5, lines 2-6); a tube guide at a first point on the tube shaft (Fig. 5, [14], and note the it is implicit the tube guide is mounted to something), said tube guide having a gap (See Fig. 5, wherein the plastic [13] is fed between the two rollers forming the guide [14], the space between the rollers being a gap) through which plastic tubing is directed onto a predetermined point on the main tube shaft, said gap making an oblique angle with respect to said main tube shaft so that said plastic tubing may be wound onto said tube shaft in helical form (See Fig. 5,

wherein the plastic [13] is guided onto a specific point on the mandrel [10] wherein the guide [14], and the gap between the rollers of the guide [14] are at an oblique angle with respect to the mandrel [10] and guide the plastic [13] at an angle onto the mandrel [10] in a helical form). Heimberger still further discloses a heat source (Fig. 5, [22], [23]) at a second point on said main tube shaft, said second point being downstream from said first point, said heat source being adapted to heat coiled plastic tubing at said second point (See col. 5, lines 20-25). Heimberger also discloses that the heated thermoplastic retains its coiled shape when cooled (See col. 1, lines 53-62).

Although Heimberger fails to specifically disclose a plastic tube used in the apparatus, the plastic tube is not part of the apparatus, but is merely a material intended to be used in, or worked on by, the apparatus. Since nothing precludes a tube rather than a filament from being feed into the apparatus of Heimberger, the fact that a tube rather than a filament is instantly claimed creates no patentable distinction between the instantly claimed invention and the apparatus of Heimberger.

Heimberger fails to specifically disclose a cooling apparatus. However, it is conventional to use a cooling apparatus, such as blowers, to cool plastic coils formed for use as slide fasteners after the coils are heated in a coil forming process (See, for example, Heimberger2, col. 2, lines 33-36). Such a cooling apparatus helps to set the shape of the coil (See Heimberger2, col. 1, lines 5-10).

Heimberger fails to specifically disclose a cutter. However, it is conventional to cut slide fasteners to preselected lengths with a cutter directly after heating and cooling (See Blecher et al., col. 4, lines 41-47). Further, Dijkman, Sr. et al. discloses an

apparatus for producing plastic coils on a mandrel (See Abstract and Fig. 2) wherein a cutter is used to cut the plastic coil on and against the mandrel after cooling without interrupting coiling formation (See col. 3, lines 40-45, and col. 4, lines 26-32, 47-56). In order to create a consistent product during continuous coiling, the cutting on the mandrel must intrinsically be at preselected intervals of time. Thus, it would have been obvious to a person having ordinary skill in the art at the time of invention to utilize a cutter on the mandrel designed to cut a coil against the mandrel, such as that in Dijkman, Sr. et al., in order to obtain pre-selected lengths of coils from the apparatus of Heimberger. The rationale for doing so would have been the motivation provided by the teaching of Dijkman, Sr. et al. that a cutter located on the mandrel would have predictably assured technically simple cutting of the coil at respective locations in order to produce the final product (See col. , lines 43-45).

Regarding Claim 10, Heimberger² teaches cooling coils with a blower, as is described above.

Regarding Claim 12, Dijkman, Sr. et al. teaches a blade adapted to cut against a tube shaft, as is described above.

Regarding Claim 15, Heimberger teaches the plastic is guided onto a turning mandrel so as to form a helix as the mandrel turns (See col. 5, lines 1-10). Any mandrel that performs helical winding has sufficient frictional force to assist in doing said helical winding. Thus, since the plastic in Heimberger is wound onto the mandrel or main tube shaft at a predetermined point, it is inherent that the main tube shaft in Heimberger has

sufficient frictional force at the predetermined point on the shaft so as to assist with winding the plastic into a helix.

2. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heimberger, Heimberger2, Blecher et al., and Dijkman, Sr. et al. as applied to Claim 5, and further in view of Moncrieff (US Pat. No. 2,740,987).

Regarding Claim 6, Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. disclose the coiling device of Claim 5 as described above. Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. fail to disclose a tube shaft tapering to a smaller diameter. However, Moncrieff discloses a tube shaft in a coiling apparatus having a smaller diameter further down the shaft (See Fig., where diameter [12] is greater than diameter [13]). Moncrieff teaches that such a decrease in diameter at the bottom of a shaft serves to assist in discharging the coil (See col. 2, line 72 to col. 3, line 2). Further, although the decrease in diameter in Moncrieff is shown as an instant drop off rather than a more gradual taper, it would have been obvious for a person having ordinary skill in the art at the time of invention to taper the shaft so that the coil can gradually drop down the tube rather than being forcefully dropped to the smaller diameter. Thus, it would have been obvious to a person having ordinary skill in the art at the time of invention to taper the shaft in the modified apparatus of Heimberger to a smaller diameter so as to assist in discharging the coil from the shaft.

Regarding Claim 7, Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. disclose the coiling device of Claim 5 as described above. Heimberger,

Heimberger2, Blecher et al. and Dijkman, Sr. et al. fail to disclose the rotation speed. However, a rotation speed between range 1 and 1000 rotations per minute is conventional for shafts in a coiling apparatus (See, for example, Moncrief, col. 3, lines 51-55, disclosing a rotation speed of 150 revolutions per minute).

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heimberger, Heimberger2, Blecher et al., and Dijkman, Sr. et al. as applied to Claim 5, and further in view of Eckles et al. (US Pat. No. 3,689,737).

Regarding Claim 8, Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. disclose the coiling device of Claim 5 as described above. Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. fail to disclose a heat gun. However, heating and cooling the coil would generally have the same effect on final product regardless on the means used to heat and/or cool the coil (i.e. every heating means is capable of heating, and every cooling means is capable of cooling). Further, it is conventional to use a heat gun to soften plastic (See, for example, Eckles et al., col. 3, lines 32-35). Thus, it would have been obvious to a person having ordinary skill in the art at the time of invention to use a heat gun as the heater in the modified apparatus of Heimberger.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heimberger, Heimberger2, Blecher et al., and Dijkman, Sr. et al. as applied to Claim 5, and further in view of Howard (US Pat. No. 2,392,842).

Regarding Claim 9, Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. disclose the coiling device of Claim 5 as described above. Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. fail to disclose a temperature range of 400°F to 700°F. However, Examiner asserts that the temperature used for heating the heated coil is generally not critical and any temperature capable of softening the plastic coil would be adequate (See, for example, Howard, col. 4, lines 13-14). Thus, it would have been obvious for a person having ordinary skill in the art to discover the optimum or workable temperature ranges by routine experimentation for the particular plastic medium being used (See MPEP 2144.05 (II)(A)).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heimberger, Heimberger2, Blecher et al., and Dijkman, Sr. et al. as applied to Claim 5, and further in view of Schelp et al. (US Pat. No. 2,720,091).

Regarding Claim 11, Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. disclose the coiling device of Claim 5 as described above. Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. fail to disclose a vortex cooling tube. However, heating and cooling the coil would generally have the same effect on final product regardless on the means used to heat and/or cool the coil (i.e. every heating means is capable of heating, and every cooling means is capable of cooling). Further, a vortex cooling tube is a conventional means for cooling (See, for example, Schelp et al., col. 1, lines 23-26). Thus, it would have been obvious to a person having ordinary skill

in the art at the time of invention to use a vortex cooling tube as the cooling means for cooling the plastic coil.

6. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heimberger, Heimberger2, Blecher et al., and Dijkman, Sr. et al. as applied to Claim 5, and further in view of Mellor (US Pat. No. 4,357,249) and Huvey (US Pat. No. 4,904,176).

Regarding Claim 16, Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. disclose the coiling device of Claim 5 as described above. Heimberger, Heimberger2, Blecher et al. and Dijkman, Sr. et al. fail to specifically disclose a mandrel made from UHMW polyethylene. However, it is conventional to fabricate the mandrel, or at least the surface of the mandrel, in a coiling apparatus from a non-stick surface (See, for example, Huvey, col. 6, lines 22-29). Further Mellor teaches that UHMW polyethylene has a low coefficient of friction, excellent dimensional stability and a good wear rate (see col. 3, lines 47-50). Thus, it would have been obvious to a person having ordinary skill in the art at the time to form the surface of the coiling mandrel from UHMW polyethylene because UHMW polyethylene is known to have has a low coefficient of friction, excellent dimensional stability and a good wear rate, all desirable characteristics for a coiling mandrel.

Allowable Subject Matter

Claim 13-14 and 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Specifically, prior art of record does not meet the limitations of second tube shaft portion located downstream of said first tube shaft as required by claim 17. The prior art of record also does not teach cutter that surrounds main tube shaft and is coaxial therewith as required by claim 13.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott W. Dodds whose telephone number is (571)270-7653. The examiner can normally be reached on Monday - Friday 9 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katarzyna Wyrozebski can be reached on (571)272-1127. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. W. D./
Examiner, Art Unit 1791

/KAT WYROZEBSKI/
Supervisory Patent Examiner,
Art Unit 1791